## **Amendments to the Claims:**

The listing of claims will replace all prior versions and listings of claims in the application:

## **Listing of Claims:**

5

6

1

2

- Claim 1. (Currently Amended) A surface treatment method for a compound semiconductor layer, the compound semiconductor layer including nitrogen, the method including a nitrogen plasma treatment step to recover:

  removing part of the compound semiconductor layer by dry etching;
  - performing a nitrogen plasma treatment step to recover from damage due to nitrogen vacancies arising in a surface of the compound semiconductor layer as a result of the dry etching.
- Claim 2. (*Currently Amended*) The surface treatment method of claim 1, wherein the nitrogen plasma treatment <u>step</u> is performed by inductively coupled plasma reactive ion etching.
  - Claim 3. (*Currently Amended*) The surface treatment method of claim 1, wherein the nitrogen plasma treatment <u>step</u> is performed by non-etching exposure to nitrogen plasma.
- Claim 4. (*Currently Amended*) The surface treatment method of claim 1, wherein <u>further</u>
  comprising rinsing the treated surface of the compound semiconductor layer is rinsed with pure
  water after the nitrogen plasma treatment step.

Cla	aim	5.	$(C\iota$	ırrently	Am	iendea	<i>l</i> ) A	sui	rface	treati	nent	metho	d f	or	a	compoun
semicondu	ictor	lay	er, tl	he comp	oun	d semi	icond	ucto	r laye	er <del>bein</del> g	g a co	<del>mpoun</del>	d se	<del>mic</del>	ond	<del>luctor laye</del>
comprising	g a	first	con	npound	semi	icondu	ictor	laye	r inc	luding	nitrog	gen an	das	seco	ond	compoun
semicondu	ictor	la	yer	formed	on	and	diffe	ring	in	compo	sition	from	the	fi	rst	compoun
semicondu	ictor	lay	er, tł	ne metho	od in	cludin	ıg:									

removing part of the second compound semiconductor layer by dry etching to partially expose a surface of the first compound semiconductor layer; and

performing a nitrogen plasma treatment step to recover from damage due to nitrogen vacancies arising in the exposed surface of the first compound semiconductor layer <u>as a result of the dry etching</u>.

- Claim 6. (*Original*) The surface treatment method of claim 5, wherein the first compound semiconductor layer comprises aluminum gallium nitride ( $Al_xGa_{1-x}N$ , 0 < x < 1) and the second compound semiconductor layer comprises gallium nitride (GaN).
- Claim 7. (*Original*) The surface treatment method of claim 5, wherein the nitrogen plasma treatment step is performed by inductively coupled plasma reactive ion etching.
- Claim 8. (*Original*) The surface treatment method of claim 5, wherein the nitrogen plasma treatment step is performed by non-etching exposure to nitrogen plasma.
- Claim 9. (*Currently Amended*) The surface treatment method of claim 5, wherein <u>further</u> comprising rinsing the treated surface of the first compound semiconductor layer is rinsed with pure water after the nitrogen plasma treatment step.

1

2

3

4

(GaN).

1	Claim 10. (Currently Amended) A method of fabrication of a semiconductor device, the					
2	method comprising:					
3	forming a compound semiconductor multilayer on a substrate, the compound					
4	semiconductor multilayer having a first compound semiconductor layer including nitrogen and a					
5	second compound semiconductor layer formed on and differing in composition from the first					
6	compound semiconductor layer;					
7	forming a first main electrode and a second main electrode on the second compound					
8	semiconductor layer, the first and second main electrodes being mutually separated by a certain					
9	distance;					
10	removing an area of the second compound semiconductor layer between the first main					
11	electrode and second main electrode by dry etching to expose a surface of the first compound					
12	semiconductor layer;					
13	annealing the partially exposed first compound semiconductor layer;					
14	treating at least part of the exposed surface area of the first compound semiconductor					
15	layer with nitrogen plasma to recover from damage due to nitrogen vacancies arising in the					
16	exposed surface of the first compound semiconductor layer as a result of the dry etching; and					
17	forming a gate compound semiconductor layer on said part of the exposed surface area of					
18	the first compound semiconductor layer.					

Claim 11. (Original) The method of fabrication of a semiconductor device of claim 10,

wherein the first compound semiconductor layer comprises aluminum gallium nitride

 $(Al_xGa_{1-x}N, 0 < x < 1)$  and the second compound semiconductor layer comprises gallium nitride.

1

2

3

1

2

- Claim 12. (*Original*) The method of fabrication of a semiconductor device of claim 10, wherein the nitrogen plasma treatment step is performed by inductively coupled plasma reactive ion etching.
- Claim 13. (*Original*) The method of fabrication of a semiconductor device of claim 10, wherein the nitrogen plasma treatment step is performed by non-etching exposure to nitrogen plasma.
  - Claim 14. (*Original*) The method of fabrication of a semiconductor device of claim 10, further comprising rinsing the treated surface of the first compound semiconductor layer with pure water after the nitrogen plasma treatment step.
  - Claim 15. (*Original*) The method of fabrication of a semiconductor device of claim 10, wherein the semiconductor device is a high electron mobility transistor.